Title (en)

EXPOSURE METHOD, SUBSTRATE STAGE, EXPOSURE APPARATUS, AND DEVICE MANUFACTURING METHOD

Title (de)

BELICHTUNGSVERFAHREN, SUBSTRATSTUFE, BELICHTUNGSVORRICHTUNG UND VERFAHREN ZUR HERSTELLUNG EINER VORRICHTUNG

Title (fr)

PROCÉDÉ ET APPAREIL D'EXPOSITION, ÉTAPE DE SUBSTRAT ET PROCÉDÉ DE FABRICATION DE DISPOSITIF

Publication

EP 2937893 B1 20160928 (EN)

Application

EP 15165192 A 20040611

Priority

- JP 2003169904 A 20030613
- JP 2003383887 A 20031113
- JP 2004039654 A 20040217
- EP 04746086 A 20040611

Abstract (en)

[origin: EP1641028A1] In exposing substrate P by projecting an image of a pattern onto substrate P via projection optical system PL and liquid 1, side surface PB and underside surface PC of substrate P are applied with liquid-repellent treatment. By such a configuration, an exposure method by which when exposing edge areas of the substrate, the exposure can be performed in a condition that a liquid immersion region is formed well and that flowing out of the liquid to the outside of the substrate stage are prevented is provided.

IPC 8 full level

H01L 21/027 (2006.01); **G03B 27/58** (2006.01); **G03F 7/20** (2006.01); **H01L 21/02** (2006.01)

CPC (source: EP KR US)

G03B 27/58 (2013.01 - EP KR US); **G03F 7/2041** (2013.01 - US); **G03F 7/70341** (2013.01 - EP KR US); **G03F 7/707** (2013.01 - EP KR US); **G03F 7/70716** (2013.01 - EP KR US)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1641028 A1 20060329; **EP 1641028 A4 20081015**; **EP 1641028 B1 20150805**; EP 2738792 A2 20140604; EP 2738792 A3 20140806; EP 2738792 B1 20150805; EP 2937893 A1 20151028; EP 2937893 B1 20160928; EP 3104396 A1 20161214; EP 3104396 B1 20180321; EP 3401946 A1 20181114; HK 1196900 A1 20141224; HK 1214680 A1 20160729; HK 1258606 A1 20191115; JP 2010010703 A 20100114; JP 2010161381 A 20100722; JP 2012129566 A 20120705; JP 2012248892 A 20121213; JP 2013016839 A 20130124; JP 2014140059 A 20140731; JP 2015163970 A 20150910; JP 2016106274 A 20160616; JP 2017187786 A 20171012; JP 2019003218 A 20190110; JP 4415939 B2 20100217; JP 5152143 B2 20130227; JP 5152215 B2 20130227; JP 5692188 B2 20150401; JP 5692189 B2 20150401; JP 5699979 B2 20150415; JP 5817869 B2 20151118; JP 6172196 B2 20170802; JP 6256498 B2 20180110; JP 6477785 B2 20190306; JP WO2004112108 A1 20060727; KR 101242815 B1 20130312; KR 101290021 B1 20130730; KR 101421866 B1 20140722; KR 101520591 B1 20150514; KR 101528016 B1 20150612; KR 101528089 B1 20150611; KR 101729866 B1 20170424; KR 101940892 B1 20190121; KR 20060016812 A 20060222; KR 20110117209 A 20111026; KR 20120115599 A 20121018; KR 20120125564 A 20121115; KR 20130102645 A 20130917; KR 20140052043 A 20140502; KR 20150023924 A 20150305; KR 20160113745 A 20160930; KR 20180112884 A 20181012; TW 200511388 A 20050316; TW 200952044 A 20091216; TW 201214518 A 20120401; TW 201445617 A 20141201; TW 201619719 A 20160601; TW 201701324 A 20170101; TW 201818451 A 20180516; TW I352375 B 20111111; TW I409853 B 20130921; TW I467634 B 20150101; TW I560749 B 20161201; TW I607292 B 20171201; TW I619148 B 20180321; US 2006139614 A1 20060629; US 2006227312 A1 20061012; US 2008117394 A1 20080522; US 2009015808 A1 20090115; US 2009015816 A1 20090115; US 2013141701 A1 20130606; US 2013141703 A1 20130606; US 2015301457 A1 20151022; US 2017329234 A1 20171116; US 7483119 B2 20090127; US 8040491 B2 20111018; US 8208117 B2 20120626; US 8384880 B2 20130226; US 9019467 B2 20150428; US 9268237 B2 20160223; US 9846371 B2 20171219; WO 2004112108 A1 20041223

DOCDB simple family (application)

EP 04746086 A 20040611; EP 14150747 A 20040611; EP 15165192 A 20040611; EP 16155448 A 20040611; EP 18162502 A 20040611; HK 14110233 A 20141014; HK 16102657 A 20160308; HK 19100965 A 20190118; JP 2004008578 W 20040611; JP 2005507005 A 20040611; JP 2009231860 A 20091005; JP 2010022454 A 20100203; JP 2012083220 A 20120330; JP 2012193619 A 20120903; JP 2012193620 A 20120903; JP 2014044468 A 20140307; JP 2015070170 A 20150330; JP 2016043921 A 20160307; JP 2017107690 A 20170531; JP 2018183797 A 20180928; KR 20057023920 A 20040611; KR 20117020347 A 20040611; KR 20127025739 A 20040611; KR 20127028313 A 20040611; KR 20137020081 A 20040611; KR 20147007168 A 20040611; KR 20157002702 A 20040611; KR 20167026062 A 20040611; KR 20187028939 A 20040611; TW 100137115 A 20040611; TW 103128271 A 20040611; TW 105104740 A 20040611; TW 105128062 A 20040611; TW 107102421 A 20040611; TW 93116810 A 20040611; TW 98124811 A 20040611; US 201313753969 A 20130130; US 201313754112 A 20130130; US 201514696898 A 20150427; US 201715664319 A 20170731; US 23206308 A 20080910; US 23206408 A 20080910; US 29732405 A 20051209; US 44892706 A 20060608; US 745008 A 20080110